

AUDIT OF THE UNIVERSITY OF EASTERN FINLAND

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2.2 Research, development and innovation activities as well as artistic activities with impact

- Korkeakoulun itsearviointi

Strong Strategic Profile in Research

The university has chosen interdisciplinary, thematic research communities (RC) as our concept to pursue world-class science in our profile areas. Identified 14 strategic research communities have been evaluated in UEFRAE2019 to be of very good, excellent or outstanding quality (score 4–6/6) and cover 70% of total research activities. UEF has systematically developed research communities with PROFI funding and UEF's strategic funding. PROFI funding provided by the Academy of Finland for Finnish universities support and speed up the strategic profiling of Finnish universities. [Research excellency](#) forms strong base for valorisation of research results and impact of research activities.

Modern and easily accessible research infrastructures are systematically developed according to UEF's infrastructure programme. [The infrastructures](#) are utilized in research, education and ecosystems of collaboration with the university's partners.

Responsible and Open Science for All

Open science and open innovations are identified as fundamental concepts in the development of the quality and impact of our research and education. A fundamental principle of the UEF

Publishing and Data Policy (2015) is that research findings, research data and publications shall be openly accessible in accordance with the principles of research ethics and the legal framework. UEF has adopted the key principles of PlanS accelerating the transition to full and immediate [Open Access to scientific publications](#) with following actions: 1) All publications in scientific journals are made openly available in UEF eRepository, an open publication and data archive. UEF eRepository also publish metadata of UEF's research data. 2) Open science services include automatic open publishing in UEF eRepository, help in research data management, support to find relevant OA journals or OA archives for data. 3) Education on open science, data management and publishing. 4) UEF participates in national and international collaboration on open science actions: European design on EOSC, European Open Science Cloud, European University Association's Open Science expert group and the Science Business network on open science.

UEF follows good scientific practice in all of its actions. UEF is committed to Guidelines of the Finnish National Board on Research Integrity (TENK) 'Responsible Conduct of Research (RCR) and Procedures for Handling Allegations of Misconduct in Finland'. Doctoral School provides course on Research Ethics for all doctoral students. The UEF Committee on Research Ethics carries out reviews on ethics of non-medical research involving and thereby support researchers to conduct responsible science. The Ethcis Committees of UEF and Hospital District of Northern Savo work in close collaboration. The processes of handling alleged violations of the responsible conduct of research is led by the Rector according to the RCR process defined by the TENK.

Part of Regional and Global Development

UEF actively promotes the utilisation of university-driven expertise in order to promote societal development through innovative research, business activities and entrepreneurship. UEF has a model and rules for strategic partnerships.

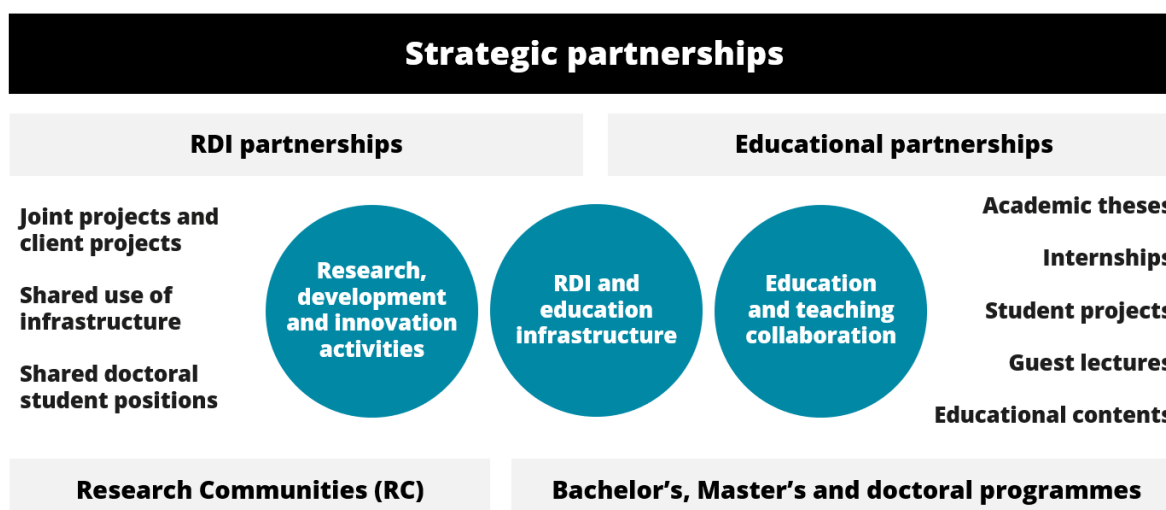


Figure 7 Strategic partnerships

UEF has established together with the partners ecosystems of impact which are supporting UEF's strategic research profile:

KuopioHealth. Exchange of expertise and knowhow, technology and information among people, companies and institutions in the fields of health, welfare and nutrition.

EduEntr collaborative educational network that gathers wide knowledge from the public institutions and private companies to ensure the provision of educational services of highest quality.

GreenHub Innovation System. A forest-based bioeconomy and technology network for experts, researchers, trainers, teachers and developers to solve challenges related to a company's business in collaboration with the company in question.

Neurocenter Finland (UEF acting as coordinator) maintains comprehensive and up-to-date information on research projects, infrastructures, methods, materials and innovations in the field of neuroscience in Finland and promote cross-boundary partnerships between academic, private and third sector actors.

House of Effectiveness is a multidisciplinary ecosystem of welfare and health related effectiveness in research and education.

Research projects are essential elements for active collaboration with business and third sector and dissemination of research results:

UEF is partner in [four national Flagships](#) (Finnish Flagships Programme by Academy of Finland), which are to support high-quality research and increase the economic and societal impact of research: 1) PREIN, Flagship on Photonics Research and Innovation, 2) ACCC Atmosphere and Climate Competence Center, 3) GeneCellNano Gene, Cell and Nano Therapy Competence Cluster for the Treatment of Chronic Diseases, 4) UNITE Forest-Human-Machine Interplay, Building Resilience, Redefining Value Networks and Enabling Meaningful Experiences. All the flagships have a separate impact plan and impact coordinators to enhance dissemination of research results.

UEF researchers are involved in 23 projects of the Finnish Strategic Research Council (SRC) Programmes. These projects have research and interaction plan and interaction coordinators.

Research funding services help staff members of the University of Eastern Finland in the preparation of funding proposals, help and support in the project management and, organize info sessions and training on the acquisition of external funding. The university's entrepreneurship and innovation services work with researchers to help commercialise the university's research results and knowledge.

UEF is active in science communication. UEF Communications and Media Relations support researchers in all kind of dissemination activities.

UEF Connect is a search service for partners, stakeholders, and the general public interested in research. It is easy to find information about the university's activities by searching directly in UEF Connect with a keyword or by browsing the service using keywords. The Uef.fi website informs external audiences about science news and events. Around 800 articles are published online per year. Around 500 media releases are produced per year.

Collaborative research [services for companies](#) have been compiled on the university website.

The university organises 6-8 science cafés every year. Each year, the university participates in a number of collaborative events, which include content produced by university experts.

Strengths

Clear strategic profile in research

Strong multidisciplinary collaboration within Research Communities

Well-established processes of Committee on Research Ethics

Comprehensive support for researchers on funding, open science and dissemination of research results

Enhancement areas

Further development of innovation ecosystems

Open science actions in research data and innovations

Research collaboration projects with industrial sector

Support for impact planning and activities

Developing the evaluation and monitoring of research communities and the impact of evaluation results.

2.2 Research, development, and innovation activities and artistic activities with impact

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Strategy has a strong impact on UEF activities

The UEF strategy 2030 with profile areas and strategic programmes had a real impact on UEF activities and priorities regarding the thematic research communities addressing global challenges. UEF has created thematic research communities in a successful way and there is a strong focus on multidisciplinary research. The UEF is a partner in four national flagships, and researchers are involved in 23 projects of the Finnish Strategic Research Council programmes. UEF's strategic funding with support PROFI funding provided by the Academy of Finland are supporting the implementation of the strategy. The audit team considers the well-known strategy by the university community and multidisciplinary research communities as a strength. The strategy is implemented with aligned support. All these activities contribute to the reforming of society. Funding services within UEF seem adequate and appreciated, both as described in the SAR and based on the interviews.

UEF has established partner ecosystems aligned with the following strategic profiles: KuopioHealth, Global Education Park, GreenHub Innovation System, Prein, Neurocenter Finland, and House of Effectiveness. It is a great strength to have several partner ecosystems in different domains focusing on strategic profiles as a multidisciplinary university. In the SAR and the information provided on the UEF webpage, the ecosystems have the focus of disseminating the latest research of the university. At the same time, further development of the innovation ecosystem is listed as an enhancement area in the SAR. While doing that, the audit team encourages the university to adopt a more explicit approach to invite questions and needs from external organisations. This way the university will have a dual approach integrated in their ecosystem, not only results disseminating from the university but also questions coming into the university. This can trigger more relevant research and further enhance UEF's contribution to reforming society.

UEF should set targets for the impact of research

Research impact has a pronounced place in UEF's strategy and in its rhetoric and it is regarded as a strength by the audit team. UEF receives information about the impact of its research through research assessment exercises. Thematic interdisciplinary research communities (RC) as

concept with action plans, appointed leaders and coordinators, have been implemented and later evaluated in UEFRAE2019. The following six criteria were assessed: (1) Research excellence and scientific quality; (2) Research collaboration; (3) Novelty, societal relevance, and impact of research activities; (4) Operational conditions; (5) Strategic visions; (6) Implementation plan. All criteria are suitable. The audit team commends especially criteria 3, novelty, societal relevance and impact of research activities. Social relevance and impact of research ought to be in focus more often. Impact cases, as used in the latest research evaluation, is one method to use more frequently. The audit team agrees that "developing the evaluation and monitoring of research communities and the impact of evaluation results" is an enhancement area as stated in the SAR and encourages the university to do so.

The research evaluations, UEFRA2013 and UEFRA2019, are considered good practices by the audit team. The audit team recommends the university to update the RAE webpage to include information concerning the results of the research assessment exercises and the actions taken after UEFRA2013 and UEFRA2019.

During the audit visit, different views on measures and targets of the impact of research emerged. The university leadership highlighted the number of start-up companies and patents, but it was at the same time questioned whether patents are a good indicator for impact. Another view was that the greatest impact on society happens when researchers produce excellent science and obtain new research results. Participation in the Times Higher Impact Ranking was mentioned as a way of getting information about the impact of their research. The following research impact indicators are mentioned in the SAR: the number of open access publications, open data sets, the JUFO classification of the publications and the number of innovation ecosystems.

It was stated in the interviews that no clear goals for research impact have been formulated at UEF. In the audit visit, several interviewees argued that impact has to be a broad concept for a university as diverse as UEF. The audit team supports this approach by UEF. The audit team concludes that UEF has not set targets for the impact of research. Identifying targets for monitoring societal impact is also an enhancement area mentioned in the SAR. The audit team recommends the university to be explicit with a broad definition on impact and to define targets with the assumed definition as the base.

The university gives support to staff in dissemination activities and science communication via UEF communications and media relations. It provides information regarding experts, project and cooperation partners openly and accessibly via UEF connect which is the university's search service. Science events, such as Café Smarts and Science Forum, are organised several times a year to share evidence-based information with the public.

UEF has systematic procedures for ensuring the responsible conduct of research and open science

As the SAR claims, UEF follows good scientific practice in all its actions. Also, UEF is committed to the Guidelines of the Finnish National Board on Research Integrity (TENK) 'Responsible Conduct of Research (RCR) and Procedures for Handling Allegations of Misconduct in Finland'. The principles of research ethics are well presented on the webpage, as are the role and tasks of the UEF Committee of Research Ethics. To include a more proactive role for the Committee, like promoting training, maintaining discussion and acting as an expert organ in problematic situations, is seen as a good practice by the audit team. The doctoral school provides courses on research ethics for doctoral researchers, and they are appreciated by them. The doctoral researchers also described an active dialogue with supervisors and awareness regarding the responsible conduct of research, which the audit team praises and sees as a good practice. From interviews with students, a need of research ethics training earlier than master's level was raised. The audit team finds that it is important to include ethics and responsible conduct of research early in the education process and to continue to have an active ongoing dialogue at the departments. Even though UEF has systematic procedures for ensuring the responsible conduct of research, the audit team recommends it to ensure that more research ethics will be also included in the bachelor's and master's programs.

In the UEF Strategy 2030 openness is highlighted by the bold statement: "Science for all – a pioneer of open science and science communication". In the SAR, open science and open innovations are identified as fundamental concepts in the development of the quality and impact of research and education provision. UEF has pledged to observe national and international principles and UEF has also adopted the key principles of Plan S. The publishing and data policy (2015) of UEF defines the principles of the impact of scientific research and the principles of open science. Information regarding open science is collected and presented in an informative way on the UEF webpage. The audit team noted that staff and doctoral researchers are well acquainted with open science and the publishing and data policy of the university. Training and support are in place and offered to staff and students.